

Application Number 10/608,252
Responsive to Office Action mailed October 3, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Previously Presented): A method comprising steps of:

- (a) assigning a unique tag for each of several data access commands; and
- (b) designating which of a plurality of queue execution modes to use for a selected one of the data access commands based on the selected command's tag.

Claim 2 (Previously Presented): The method of claim 1, further comprising steps of:

- (c) associating at least two of the data access commands with only one of the queue execution modes; and
- (d) executing the two commands in an order that is partially based on an estimated seek length for each of the two commands.

Claim 3 (Original): The method of claim 1, further comprising a step of establishing a contiguous range of tags that includes the selected command's tag, the contiguous range corresponding to the mode to be designated in the designating step (b).

Claim 4 (Previously Presented): The method of claim 1, further comprising steps of:

- (c) holding a sector identifier of the data access command in a task file register; and
- (d) transferring a data block corresponding to the sector identifier through a transducer adjacent to a data storage disc.

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Claim 5 (Original): The method of claim 1, further comprising steps of:

- (c) associating one of the queue execution modes with a first queue;
- (d) associating another of the queue execution modes with a second queue; and
- (e) performing an operation that affects at least one command in the first queue without affecting a command that is in the second queue.

Claim 6 (Currently Amended): The method of claim 1, further comprising a step (c) of determining whether to abort ~~any of the~~ a pending data access command[[s]] based on a newly-received command.

Claim 7 (Previously Presented): The method of claim 1, further comprising a step (c) of redefining a queue execution mode that is associated with at least one tag while the at least one tag is not assigned to any data access command.

Claim 8 (Previously Presented): The method of claim 1 in which the designating step (b) includes a step (b1) of determining which of a plurality of error correction modes to use for the selected data access command.

Claim 9 (Original): The method of claim 1, further comprising a step (c) of using at least one of the queue execution modes to transfer video data through a transducer adjacent to a data storage disc.

Claim 10 (Previously Presented): The method of claim 9 in which the designating step (b) includes a step (b1) of determining whether to use a sequential delivery mode for the selected data access command.

Claim 11 (Previously Presented): The method of claim 1 in which the designating step (b) includes a step (b1) of determining whether to use a sequential delivery mode for the selected data access command.

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Claim 12 (Currently Amended): The method of claim 1 in which a triggered operation is performed on an in-store one of the commands if an in-progress one of the commands is associated with a predetermined trigger tag, and otherwise the triggered operation is generally not performed on the in-store one of the commands.

Claim 13 (Original): The method of claim 1 in which the designating step (b) includes a step (b1) of establishing the designated queue execution mode so that an error is reported if the selected command is not completed within a predetermined interval, and otherwise the error is generally not reported.

Claim 14 (Original): The method of claim 1 in which the assigning step (a) comprises steps of:

- (a1) assigning a first one of the tags to a first-received one of the commands;
- (a2) while the received command is still pending, assigning a second one of the tags to a second-received one of the commands;
- (a3) while the received commands are both still pending, assigning a third one of the tags to a third-received one of the commands; and
- (a4) after the assigning steps (a1) – (a3) are completed, completing the first-, second- and third-received commands.

Claim 15 (Original): The method of claim 14 in which the assigning step (a) further comprises a step (a5) of assigning a fourth one of the tags to a fourth-received one of the commands while the third-received command is still pending.

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Claim 16 (Currently Amended): A method comprising steps of:

- (a) defining an available set of modes to comprise a standard mode and a video mode, the standard mode associated with a standard queue and configured to use a standard error correction process, the video mode associated with a non-standard queue and not configured to use the standard error correction process;
- (b) assigning a sequential delivery queue tag to a first-received ~~one of the~~ command[[s]], the first-received command being a video data transfer command;
- (c) assigning a first standard queue tag to a second-received ~~one of the~~ command[[s]] while the first-received command is still pending, the second-received command being a standard read command;
- (d) assigning a second standard queue tag to a third-received ~~one of the~~ command[[s]] while the first- and second-received commands are both still pending, the third-received command being a standard write command;
- (e) assigning another tag to a fourth-received ~~one of the~~ command[[s]] while the third-received command is still pending;
- (f) designating one of the available set of modes for each of the received commands based on the command's tag; and
- (g) after the assigning steps (b)-(e) and the designating step (f) are completed, completing the received commands.

Claim 17 (Original): The method of claim 16 in which the completing step (g) is performed by steps comprising:

- (g1) using the video mode to transfer data through a transducer at a disc location identified by the sector address associated with the first-received command; and
- (g2) using the standard mode and the sector addresses associated with the standard commands, executing the standard commands in a sequence that is partially based on an estimated seek length for each of the standard commands.

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Claim 18 (Currently Amended): An electromechanical device comprising:
one or more data storage disc(s);
a memory configured to hold several pending commands for accessing the disc(s), each of the commands having a unique tag; and
a controller configured to determine which of a plurality of queue execution modes to use for a selected one of the pending data-access commands based on the selected command's tag.

Claim 19 (Original): The electromechanical device of claim 18 in which the memory is configured to hold the tag as a binary value no larger than one byte.

Claim 20 (Original): The electromechanical device of claim 18, further including an actuator having a nominal seek time longer than 1 millisecond.

Claim 21 (Original): The electromechanical device of claim 18 in which the memory includes a multiple-bit state register configured to identify one or more other tags that are available for a future command.

Claim 22 (Original): The electromechanical device of claim 18 in which the queue execution modes include a higher-priority mode associated with a first queue and a lower-priority mode associated with a second queue.

Claim 23 (Original): The electromechanical device of claim 22 in which the first queue is associated with a total of M tags, in which the second mode is associated with a total of N tags, and in which $N > 0$ and $M > 0$.

Claim 24 (Original): The electromechanical device of claim 18 in which the controller is operatively coupled to communicate with a host through a serial ATA bus.

Claim 25 (Previously Presented): The electromechanical device of claim 18, wherein the plurality of queue execution modes includes at least a standard mode and a video mode.

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Claim 26 (Previously Presented): The method of claim 1, wherein the plurality of queue execution modes includes at least a standard mode and a video mode.